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REDISCOVERING *SEDUM PULCHELLUM* AT ITS NORTHEASTERN LIMIT

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AMONG plant collectors in Missouri who made important contributions to the botany of the state during the '60's and '70's Garland C. Broadhead was outstanding. One of the early state geologists, he lived at Pleasant Hill, Cass County, in the western part of the state, and travelled and collected in many other parts of Missouri. On his geological trips he found time to collect plants. He was a keen observer and was one of the first to record the relationship existing between the distribution of plants in Missouri and the geology and soils. He collected many rare plants, a number of which have never since been re-collected either in the state or in the particular county where Broadhead got them. For example, Broadhead found *Cypripedium candidum* in Cass County, but today this species, as far as known, is extinct in that county. Most of Broadhead's herbarium is deposited in the Herbarium of the University of Missouri at Columbia, Missouri.

From the standpoint of phytogeography, Broadhead's collection of *Sedum pulchellum* Michx. from Lincoln County, Missouri, was one of his most notable discoveries. This county is situated in eastern Missouri, lying along the Mississippi River between townships 48 and 51 North (latitude about 39° North). It is the second county north of the Missouri River. Although the

county, generally speaking, is located in the glaciated part of the state north of the Missouri River, many parts of it and adjacent counties have preserved an Ozark topography and flora which give every indication of having escaped Pleistocene glaciation.¹ Throughout its range *Sedum pulchellum* inhabits unglaciated terrain, occurring north of the Coastal Plain from Central Kentucky, Missouri, and southeastern Kansas on the north to northwestern Georgia, Alabama, and Arkansas on the south. Wherry has shown that the previous records for this species from Virginia and West Virginia should be referred to *Sedum Nevii*.² In Missouri the collection of *Sedum pulchellum* from Lincoln County by Broadhead marks not only its northeasternmost known point in the state, but the farthest north in its entire range (the Lincoln County locality, slightly north of 39° north latitude, is farther north than its localities in Jackson and Boone counties). Throughout the rest of its dispersal in Missouri, *Sedum pulchellum* is known only from the western half of the state, practically south of the Missouri River. Strictly speaking, it occurs north to Jackson and Moniteau and Boone counties on the north and reaches its eastern limits in Camden, Dallas, Texas, and Oregon counties. Throughout the eastern half of the Ozarks it is absent. This appears strange, since its occurrence in Kentucky, Alabama, and Georgia to the east might presuppose a continuation of its range westward into eastern Missouri. Nevertheless, outside of the Lincoln County record, the species skips eastern Missouri and reappears in the southwestern and west-central part of the state. The nearest stations in Missouri to the isolated northeastern one in Lincoln County are the several known in Boone County, also north of the Missouri River. The Boone County stations are about sixty-five miles (as the crow flies) distant from the Lincoln County locality. But the nearest easternmost Ozark localities (in Camden, Texas, and Oregon counties) are approximately 110, 140, and 170 miles distant (as the crow flies). Thus, this Lincoln County record is a remarkable isolated one when one considers the distribution of the species in the state as a whole.

¹ In a later paper, the author intends to present a detailed account of this "driftless area" of Missouri from the botanical and geological evidence which he has accumulated.

² Wherry, E. T. The Ranges of our Eastern Parnassias and Sedums. *Bartonia* no. 17: 20. 1935.

Since Broadhead's collection of the Lincoln County specimen, almost eighty years ago, some botanists had been skeptical whether he had actually collected the species in this county. By dint of an opportunity to collect in certain parts of Lincoln County during the spring of 1941, the writer chanced to botanize an area known as the "Natural Bridge," located along Sandy Creek, slightly west of the junction of Sandy and Little Sandy Creek, T 51 N, R 2 W, sect. 15, 5 miles west of Whiteside. Here the past meanderings of Sandy Creek have carved out of the Ordovician limestone bluffs a high and beautiful arch, called the "Natural Bridge." Across the valley from this place is another series of high limestone bluffs forming a narrow ridge in sect. 15 and 14 along Sandy Creek. While climbing up the steep ledges of these bluffs along the creek the writer was greatly surprised to encounter several plants of the long-lost *Sedum pulchellum*. As the area became more thoroughly explored many more plants were found. In fact, on the bluffs on either side of the valley, the *Sedum* occurred plentifully on the most exposed parts on top of the bluffs, especially along their edges, as well as along the upper ledges of the bluffs and on rock slides on the slopes. Occurring with the *Sedum* were *Androsace occidentalis*, *Phacelia Purshii*, *Draba cuneifolia* and *Opuntia Rafinesquii*, species which, like *Sedum pulchellum*, are chiefly or entirely Ozarkian in their distribution in Missouri and which are here at or near their northeastern limits of dispersal in the state. Other species with a similar Ozarkian range occurring here at or near their northeastern limits in the state were *Arabis virginica* and *Myosurus minimus*. Remarkable also was the fact that so much of the *Sedum* was actually thriving on parts of the bluffs that were subjected to frequent grazing by sheep and horses. It might have been expected that grazing conditions would have so disturbed this isolated station of *Sedum* as to exterminate it completely during the eighty years since Broadhead's collection of it, most likely from this same station. In fact, when the writer spotted the first few plants on the ledges of rocky bluffs, he noticed that the tips of some of the plants had been chewed by sheep, and he immediately became pessimistic lest these few plants were making the last stand of the species at this locality; but, fortunately, as thousands and thousands of *Sedum pulchellum*

plants were discovered, the writer realized that the flora, judging from the abundance of the other native component species occurring here, had persisted remarkably well despite the introduction of stock-raising. Even if grazing should exterminate it from some parts of the bluffs, another portion of the ridge, which has been fenced off and protected from cattle, would have preserved thousands of plants from destruction. Thus, the little *Sedum pulchellum*, a winter-annual, is still holding its own in Lincoln County against what would appear to be such great odds as to have exterminated many other species of plants. *Sedum pulchellum* is evidently a tough little plant, hard to kill, and it is to be hoped that it will continue indefinitely to reproduce and prosper here, to remind us that it is at its northeastern limit of range.

The writer's collection of this species, deposited in the Herbarium of Field Museum is as follows: at "Natural Bridge" along Sandy Creek and on the other side of the valley on bluffs, T 51 N, R 2 W, sect. 14 and 15, 5 miles west of Whiteside, Lincoln County, Missouri, April 28, 1941, *Steysmark 28532*.

FIELD MUSEUM OF NATURAL HISTORY, Chicago

CAREX CORRUGATA FROM ALABAMA.—Among the formerly unidentified Carices in the Gray Herbarium there is a sheet from northern Alabama of thoroughly characteristic *C. rugata* Fernald¹ in RHODORA, xliii. 545, t. 671, figs. 1-4 (1941), with the strongly puckered perigynia and the cuneate-obovoid achene with truncate summit as in the plant of the lower Nottaway Valley in southeastern Virginia. The Alabama material is from shaded bottoms of Cotaco Creek, about 12 miles east of Hartsville, Morgan County, May 19, 1934, *R. M. Harper*, no. 3226. This station is in the valley of the Tennessee River. Search farther up that valley, in North Carolina, and farther down, in Tennessee, may further extend the range of the species.—M. L. FERNALD.

¹ CAREX *corrugata*, nom. nov. *C. rugata* Fernald in RHODORA, xliii. 545, t. 671, figs. 1-4 (1941), not Ohwi in Acta Phytotax. et Geobot. i. 76 (1932).

Another instance showing how difficult it is to find an unused descriptive specific name in a large world-wide genus.